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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/655,665	09/06/2000	Toshihiro Sasai	80966	8974

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TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER

JERABEK, KELLY L

ART UNIT

PAPER NUMBER

2612

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/655,665

Applicant(s)

SASAI, TOSHIHIRO

Examiner

Kelly L. Jerabek

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 6,7 and 9-11 is/are allowed.
6) ☒ Claim(s) 1-5 and 8 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/3/2004.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 12/21/2004 have been fully considered but they are not persuasive.

In response to applicant's argument that May et al. US 6,693,668 is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the May reference discloses an image sensor (100) including an array of sensor unit pixels (124) for capturing images. An image sensor (100) includes an array of photosensitive pixels (124) for generating digital image signals and the digital image signals are transferred to a monitoring computer (118) for display (col. 3, lines 1-21). Therefore, it can be seen that the image sensor (100) disclosed by May is capable of generating display images. May states that a memory device (144) is coupled to the image sensor and that the memory device (144) stores a map of functioning and malfunctioning pixels (col. 4, line 63 – col. 5, line 12). Therefore, it would have been obvious for one skilled in the art to modify the device disclosed by Yen by implementing the teachings of the May reference. Doing so would provide a means for correcting the values of malfunctioning pixels (col. 5, lines 8-11).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 and 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Yen et al. US 6,724,945 in view of May et al. US 6,693,668.

Re claim 1, Yen discloses, in figure 1, an image processing apparatus for generating new image data having pixel values having all color information for each interpolation point set on a two-dimensional plane, from original image data made up of many pixels which are arrayed in a matrix on the two-dimensional plane and each of which has only a pixel value representing a predetermined color information level obtained by an image sensor having individual color filters, comprising:

A replacement unit (28) for a pixel value of a pixel that needs to be replaced by another pixel value, replacing the pixel value by a predetermined pixel value, adding replacement information indicating replacement of the pixel value to the replaced pixel value and outputting the pixel value as replacement information-added image data; and

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An interpolation unit (26) for outputting interpolated pixel values having all color information by interpolating a pixel value at an interpolation point for each color information on the basis of a predetermined arithmetic expression from pixel values of pixels of the same color falling within a predetermined interpolation region containing the interpolation point among all replacement information-added image data output from the replacement unit, and when replacement information of any pixel used for calculation indicates replacement, using an arithmetic expression different from the arithmetic expression (col. 3, lines 8-65). Yen teaches identifying defect pixels during calibration of the imaging device and storing maps of the pixels in RAM (28). However, Yen does not expressly disclose adding replacement information representing non-replacement of the pixel value to the pixel value when a pixel value of a pixel need not be replaced.

May discloses an image sensor (100) including an array of sensor unit pixels (124) for capturing images. An image sensor (100) includes an array of photosensitive pixels (124) for generating digital image signals and the digital image signals are transferred to a monitoring computer (118) for display (col. 3, lines 1-21). Therefore, it can be seen that the image sensor (100) disclosed by May is capable of generating display images. May states that a memory device (144) is coupled to the image sensor and that the memory device (144) stores a map of functioning and malfunctioning pixels (col. 4, line 63 – col. 5, line 12). Therefore, it would have been obvious for one skilled in the art to modify the device disclosed by Yen by implementing the teachings of the May

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reference. Doing so would provide a means for correcting the values of malfunctioning pixels (col. 5, lines 8-11).

Re claims 2-5 and 8, see claim 1 above.

Allowable Subject Matter

Claims 6-7 and 9-11 allowed.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fail to anticipate or render obvious the following technical features as recited in the highlighted claims:

Re claim 6, the prior art fails to teach or suggest an image processing apparatus for generating new image data comprising a replacement unit and an interpolation unit, wherein when target calculation pixels used to calculate the interpolated pixel value include a pixel whose replacement information indicates, an arithmetic expression is used, which has a reduced weight coefficient comparing to a normal arithmetic expression for calculating the interpolated pixel value.

Re claim 7, the prior art fails to teach or suggest an image processing apparatus for generating new image data comprising a replacement unit, an interpolation unit, a

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compensation value calculation unit and a compensation unit, wherein when target calculation pixels used to calculate the interpolated pixel value include a pixel whose replacement information indicates, an arithmetic expression is used, which has a reduced weight coefficient comparing to a normal arithmetic expression for calculating the interpolated pixel value.

Re claim 9, the prior art fails to teach or suggest an image processing apparatus for generating new image data comprising a replacement unit, an interpolation unit and a region value calculation unit, wherein the region value calculation unit sequentially receives pixel values forming the replacement information-added image data output from the replacement unit in parallel with each other by a predetermined number of pixel lines as pixel blocks for single pixel columns to form a sub-matrix from a predetermined number of pixel blocks received successfully.

Re claim 10, the prior art fails to teach or suggest an image processing apparatus for generating new image data comprising a replacement unit, an interpolation unit, a compensation value calculation unit, a compensation unit and a region value calculation unit, wherein the region value calculation unit sequentially receives pixel values forming the replacement information-added image data output from the replacement unit in parallel with each other by a predetermined number of pixel lines as pixel blocks for single pixel columns to form a sub-matrix from a predetermined number of pixel blocks received successfully.

Re claim 11, the prior art fails to teach or suggest an image processing apparatus for generating new image data comprising a replacement unit, an interpolation unit and a defect information generation unit, wherein the defect information generation unit uses relative pixel position information with respect to an immediately preceding defective pixel position as information indicating a defective pixel position as information indicating a defective pixel position of the image sensor to determine whether each pixel forming the original image data is a defective pixel.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelly L. Jerabek whose telephone number is **(571) 272-7312**. The examiner can normally be reached on Monday - Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on **(571) 272-7308**. The fax phone number for submitting all Official communications is 703-872-9306. The fax phone number for submitting informal communications such as drafts, proposed amendments, etc., may be faxed directly to the Examiner at **(571) 273-7312**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KLJ


WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600